REMARKS

Claims remaining in the present patent application are numbered 1, 2, 4-7, 9-12, 14-21, 23-26, and 28-35. Claims 1, 4-6, 12, 20, 23-25, and 31 have been amended. Claims 3, 8, 13, 22, and 27 have been withdrawn. The rejections and comments of the Examiner set forth in the Office Action dated October 4, 2005 have been carefully considered by the Applicant. Applicant respectfully requests the Examiner to consider and allow the remaining claims.

35 U.S.C. §103 Rejection

The present Office Action rejected Claims 1-35 under 35 U.S.C. 103(a) as being unpatentable over Friedrich et al. (U.S. Patent No. 6,003,079) in view of Zinky et al. (U.S. Patent No. 6,691,148). Applicant has reviewed the above cited references and respectfully submit that the present invention as recited in Claims 1-35, is neither anticipated nor rendered obvious by the Friedrich et al. reference taken alone or in combination with the Zinky et al. reference.

Independent Claims 1 and 20

Applicant respectfully points out that independent Claims 1 and 20 each recite that the present invention includes a method and system for resource allocation in a communication network supporting a plurality of application

environments. In particular, each of the independent Claims 1 and 20 recites that the present invention includes, in part:

> modeling said plurality of components based on an objective function that responds to conditions as represented by said plurality of response time metrics when at least one of said plurality of response time metrics does not satisfy at least one of a plurality of service level objectives to determine a new effective distribution of computational resources throughout said plurality of components such that said plurality of components that are modeled satisfies said plurality of service level objectives . . . (Emphasis Added)

The claimed embodiments of Claims 1 and 20 pertain to methods and systems of resource allocation in a communication network having a plurality of application environments. In particular, independent Claims 1 and 20 each recite that a plurality of a plurality of components are modeled that responds to conditions represented by a plurality of response time metrics. The modeling occurs when at least one of the plurality of response time metrics does not satisfy at least one of a plurality of service level objectives. Modeling is implemented to determine a new effective distribution of computational resources throughout the plurality of components so that the model of the plurality of components satisfies the plurality of service level objectives.

Applicant respectfully notes that the Friedrich et al. reference taken alone or in combination with the Zinky et al. reference does not teach nor suggest the present invention as claimed in which a new effective distribution of computational resources is determined from a model of the plurality of components that respond to conditions represented by the plurality of response time metrics such that the model of the plurality of components satisfies a plurality of service level objectives, as claimed in independent Claims 1 and 20 of the present invention.

In contrast, the Friedrich et al. reference teaches a system and method for continuously measuring quality of service in a federated application environment. In particular, the Friedrich et al. reference does not teach the modeling technique that is used to determine a new effective distribution of computational resources throughout the plurality of components.

Specifically, Applicant respectfully disagrees with the present Office Action that asserts that the Friedrich et al. reference, at column 11, lines 4-31, teaches the modeling of the components to determine a new effective distribution of computational resources. Applicant has thoroughly reviewed the cited paragraph in the Friedrich et al. reference and fails to find support for the teaching of

the modeling of the components to determine a new effective distribution of computational resources.

Instead, Applicant understands the Friedrich et al. reference to teach the identification and diagnosis of problems throughout a network. That is, the Friedrich et al. identifies where in the network is there a problem in satisfying quality of service. However, the Friedrich et al. reference does not identify and diagnose the problems through any modeling technique. Also the Friedrich et al. reference does not provide for any determination of a new effective distribution of computational resources throughout the plurality of components.

Specifically, the Friedrich et al. reference in col. 11, lines 4-31 outlines a method in Figures 4A and 4B that determines the source of quality of service problems. The Friedrich et al. reference utilizes transport metrics and resource consumption metrics to determine if the source of the problem lies on a local or remote level. For example, transport metrics include TransportResponse 36 and TransportDemand 37 metrics. Resource consumption metrics include LocalResonse 40 and ServiceDemand 42 metrics. However, the determination of the source of the quality of service problems is based solely on these transport and resource consumption metrics, and not on any modeling technique that models the plurality of components that is

capable of responding to conditions represented by a plurality of response time metrics, as is recited in independent Claims 1 and 20 of the present invention.

Specifically, the Friedrich et al. reference states that depending on a comparison between the transport metrics and the resource consumption metrics, the source of the quality of service metrics might be located at the network or the host, or a combination of both. For instance, when the resource consumption metrics as a ratio is less than the transport response metrics as another ratio, there is a transport problem and the source of the quality of service problem is in the network. On the other hand, if the opposite is the case, then the source of the problem might be either in the network or the local host.

However, the Friedrich et al. reference only identifies and possibly diagnoses a source of a quality of service problem. Moreover, the determination is not made through any modeling of the plurality of components in an application environment.

Also, nowhere does the Friedrich et al. reference determine a new effective distribution of computational resources, as is asserted in the present Office Action. Instead, the Friedrich et al. reference only identifies and diagnoses the source of the quality of service problem.

Applicants respectfully request where the Friedrich et al. reference teaches the determination of the new effective distribution.

In addition, the Zinky et al. reference fails to overcome the shortcomings of the Friedrich et al. reference. In particular, the Zinky et al. reference discloses a framework for providing quality of service requirements in a distributed object-oriented computer system. In particular, the Zinky et al. reference discloses a contract that stores levels of quality of service offered by a network, determines a quality of service required by the object, and evaluates the contract to select a level of quality of service that corresponds to a current quality and adjusts the current quality of service to obtain the required quality of service as needed. However, the Zinky et al. reference does not teach the modeling of the plurality of components that responds to conditions represented by the plurality of response time metrics to determine a new effective distribution of computational resources that satisfies the plurality of service level objectives, as recited in independent Claims 1 and 20 of the present invention.

The present invention, on the other hand, claims a communication network that comprises a plurality of computation resources that service at least one application

environment. Distinctively, the methods outlined in independent Claims 1 and 20 teach that when a service level objective has not been satisfied, the plurality of components are modeled such that the model responds to conditions represented by the plurality of response time metrics to determine a new effective distribution of computational resources. A model is selected that is capable of satisfying the plurality of service level objectives. Specifically, the present invention is distinct from the Friedrich et al. reference taken alone or in combination with the Zinky et al. reference in that the present invention provides for modeling of the plurality of components to determine a new effective distribution of computational resources, as is recited in independent Claims 1 and 20 of the present invention.

Thus, Applicant respectfully submits that the Friedrich et al. reference taken alone or in combination with the Zinky et al. reference does not anticipate or render obvious the method and system of the present invention as recited in independent Claims 1 and 20. Accordingly, Applicant respectfully submits that independent Claims 1 and 20 overcome the cited references and are in a condition for allowance. As such, Claims 2, 4-7, and 9-11 which depend on independent Claim 1 are also in a condition for allowance as being dependent on an allowable base claim. Also, Applicant respectfully submits

that Claims 21-30 which depend on independent Claim 20 are also in a condition for allowance as being dependent on an allowable base claim.

Independent Claims 12 and 31

Applicant respectfully points out that independent Claims 12 and 31 each recite that the present invention includes a method and system for resource allocation in a communication network supporting a plurality of application environments that is not rendered obvious by the Friedrich et al. reference taken alone or in combination with the Zinky et al. reference for analogous arguments set forth above with respect to independent Claims 1 and 20.

Furthermore, independent Claim 31 recites that he present invention includes a dynamic resource manager that models the plurality of components when service level objectives are not met such that the model responds to conditions represented by a plurality of response time metrics to determine a new effective distribution of computational resources. The new model reflecting the new effective distribution is selected that is capable of satisfying the plurality of service level objectives. These above limitations are not taught or rendered obvious by the Friedrich et al. reference taken alone or in combination with the Zinky et al. reference. As such, independent Claim 31 overcomes the cited references and is

in a condition for allowance. Further, claims 32-35 which depend on independent Claim 31 are also in a condition for allowance as being dependent on an allowable base claim.

CONCLUSION

In light of the amendments and arguments presented herein, Applicant respectfully requests reconsideration of the rejected Claims for allowance thereof.

Based on the arguments presented above, Applicant respectfully asserts that Claims 1, 2, 4-7, 9-12, 14-21, 23-26, and 28-35 overcome the rejections of record. Therefore, Applicant respectfully solicits allowance of these Claims.

The Examiner is invited to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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